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1 4. The method of claim 1, wherein step (1) comprises the step of:  
2 obtaining, directly from an external service, said MTM value for at least  
3 one of the sub-portfolios.

1 5. The method of claim 1, wherein step (2) comprises the step of:  
2 calculating the value of said MTM Collateral Credits using the following  
3 equation:

$$\sum_{i=1}^N \max\{MTM_{ji}, 0\}$$

5 wherein  $MTM_{ji}$  is said MTM value for the sub-portfolio of obligations between  
6 a user  $j$  and a user  $i$ , and  $N$  is the total number of users with whom said user  $j$  has  
7 existing obligations.

1 6. The method of claim 1, wherein said collateral received in step (5)  
2 corresponds to at least one of the following collateral assets:

- 3 (i) cash;
- 4 (ii) securities;
- 5 (iii) letters of credit;
- 6 (iv) parent guarantees; and
- 7 (v) self guarantees.

1 7. The method of claim 1, wherein step (6) comprises the step of:  
2 allocating said received collateral between each of the sub-portfolios using  
3 rehypothecation.

1 8. The method of claim 1, wherein risk is not mutualized among the group  
2 of users.

1 9. The method of claim 1, wherein risk is mutualized among the group of  
2 users.

1 10. The method of claim 1, wherein each of the users has a sub-portfolio of  
2 assets that derive at least in part from over the counter trading.

1 11. The method of claim 10, wherein risk is mutualized among the group of  
2 users.

1 12. A method for providing centralized collateral management between a  
2 group of users, wherein each of the users has a portfolio of assets within a  
3 network of obligations, and wherein each of the users has a sub-portfolio of  
4 obligations with respect to each other, comprising the steps of:

5 (1) determining a mark to market (MTM) value for each of the sub-  
6 portfolios;

7 (2) determining an anticipatory collateral value for the portfolios and  
8 sub-portfolios of each of the users;

9 (3) providing Anticipatory Collateral Credits to each of the users  
10 based on the difference between said anticipatory collateral value of the sub-  
11 portfolios and portfolios of each of the users;

12 (4) notifying the users of their respective total collateral obligations;

13 (5) notifying the users of the value of their respective said  
14 Anticipatory Collateral Credits;

15 (6) receiving any required collateral from each of the uses; and

16 (7) allocating said received collateral against the sub-portfolios of  
17 each of the users;

18 whereby the amount of collateral posted by each of the users is minimized  
19 by said Anticipatory Collateral Credits and is used to protect against potential  
20 future losses due to the potential inability of the collateral provider to fulfill its  
21 obligations.

1 13. The method of claim 12, wherein step (2) comprises the step of:  
2 determining said anticipatory collateral value for the portfolios and sub-  
3 portfolios by performing one of the following Value at Risk methods:

- 4 (i) variance-covariance;  
5 (ii) Monte Carlo simulation; and  
6 (iii) historical.

1 14. The method of claim 13, wherein step (2) further comprises the step of:  
2 refining said anticipatory collateral value determination for each of the  
3 portfolios and sub-portfolios by performing one of the following refinement  
4 methods:

- 5 (iv) fundamental models;  
6 (v) scenario testing; and  
7 (vi) stress testing.

1 15. The method of claim 12, wherein step (2) comprises the step of:  
2 calculating said anticipatory collateral value,  $AC$ , for each of the portfolios  
3 and sub-portfolios using the following equation:

$$AC = P * \sigma * N'(CI)$$

4  
5 wherein  $P$  is said MTM value for the sub-portfolio or portfolio,  $\sigma$  is the volatility  
6 value for the sub-portfolio or portfolio,  $N'()$  is the inverse normal probability  
7 distribution, and  $CI$  is a pre-selected confidence interval.

1 16. The method of claim 15, wherein step (3) comprises the step of:  
2 calculating the value of said Anticipatory Collateral Credits using the  
3 following equation:

4 
$$\sum_{i=1}^N AC_{ji} - AC_{jp}$$

5 wherein  $AC_{jp}$  is said anticipatory collateral value for the entire portfolio of a user  
6  $j$ ,  $AC_{ji}$  is said anticipatory collateral value for a sub-portfolio of obligations  
7 between said user  $j$  and a user  $i$ , and  $N$  is the total number of users with whom  
said user  $j$  has existing obligations.

1 17. The method of claim 12, wherein step (4) comprises the step of:  
2 dynamically calculating said anticipatory collateral value for the portfolios  
3 and sub-portfolios at each of least one of the following time intervals:

- 4 (i) daily;  
5 (ii) weekly;  
6 (iii) monthly; and  
7 (iv) a pre-selected time interval value.

1 18. The method of claim 12, wherein step (7) comprises the step of:  
2 allocating said received collateral between each of the sub-portfolios using  
3 rehypothecation.

1 19. The method of claim 12, wherein risk is not mutualized among the group  
2 of users.

1 20. The method of claim 12, wherein risk is mutualized among the group of  
2 users.

1 21. The method of claim 12, wherein each of the users has a sub-portfolio of  
2 assets that derive at least in part from over the counter trading.

1 22. The method of claim 21, wherein risk is mutualized among the group of  
2 users.

1 23. The method of claim 12, further comprising the steps of:

2 (8) providing MTM Collateral Credits up to the MTM gains on each  
3 of the sub-portfolios; and

4 (9) notifying the users of the value of their respective MTM Collateral  
5 Credits.

1 24. A computer program product comprising a computer usable medium  
2 having control logic stored therein for causing a computer to provide centralized  
3 collateral management between a group of users, wherein each of the users has  
4 a portfolio of assets within a network of obligations, and wherein each of the  
5 users has a sub-portfolio of obligations with respect to each other, said control  
6 logic comprising:

7 first computer readable program code means for causing the computer to  
8 determine a mark to market (MTM) value for each of the sub-portfolios;

9 second computer readable program code means for causing the computer  
10 to provide MTM Collateral Credits up to the MTM gains on each of the sub-  
11 portfolios;

12 third computer readable program code means for causing the computer to  
13 notify the users of their respective total collateral obligations;

14 fourth computer readable program code means for causing the computer  
15 to notify the users of the value of their respective MTM Collateral Credits;

16 fifth computer readable program code means for causing the computer to  
17 acknowledge receipt of any required collateral from each of the users; and

18 sixth computer readable program code means for causing the computer to  
19 allocate said received collateral against the sub-portfolios of each of the users;

20 whereby the total amount of collateral posted by each of the users is  
21 minimized by said MTM Collateral Credits and is used to protect against actual  
22 losses due to the potential inability of the collateral provider to fulfill its  
23 obligations.

1        25.    A computer program product comprising a computer usable medium  
2        having control logic stored therein for causing a computer to provide centralized  
3        collateral management between a group of users, wherein each of the users has  
4        a portfolio of assets within a network of obligations, and wherein each of the  
5        users has a sub-portfolio of obligations with respect to each other, said control  
6        logic comprising:

7                first computer readable program code means for causing the computer to  
8                determine a mark to market (MTM) value for each of the sub-portfolios;

9                second computer readable program code means for causing the computer  
10                to determine an anticipatory collateral value for the portfolios and sub-portfolios  
11                of each of the users;

12                third computer readable program code means for causing the computer to  
13                provide Anticipatory Collateral Credits to each of the users based on the  
14                difference between said anticipatory collateral value of the sub-portfolios and  
15                portfolios of each of the users;

16                fourth computer readable program code means for causing the computer  
17                to notify the users of their respective total collateral obligations;

18                fifth computer readable program code means for causing the computer to  
19                notify the users of the value of their respective said Anticipatory Collateral  
20                Credits;

21                sixth computer readable program code means for causing the computer to  
22                acknowledge receipt any required collateral from each of the uses; and

23                seventh computer readable program code means for causing the computer  
24                to allocate said received collateral against the sub-portfolios of each of the users;

25                whereby the amount of collateral posted by each of the users is minimized  
26                by said Anticipatory Collateral Credits and is used to protect against potential  
27                future losses due to the potential inability of the collateral provider to fulfill its  
28                obligations.



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